

USSR

KORZENKO, V. N., and SHIKULOV, V. A., Zdravookhraneniye Belorusssii, Vol 17,
No 6, Jun 71, pp 47-48

importance to pay attention to diseases such as lymphadenitis, Parinaud's
conjunctivitis, necrotic sore throat, tuberculosis of lymph nodes, pneumonia,
and some others, which often mask tularemia.

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USSR

UDC 621.373

YEVDOKIMOV, A. V., KORZH, D. M.

"A Capacitive-Magnetic Cadence Pulse Source"

Moscow, Otkrytiya, izotreteniya, promyshlennye obraztsy, tovarnyye znaki,
1970, No 36, Soviet Patent No 288033, class 21, filed 16 Sep 69, published
3 Dec 70, pp 53-54

Translation: This Author's Certificate introduces a capacitive-magnetic
cadence pulse source which contains several magnetic pulse oscillators.
As a distinguishing feature of the patent, the circuit of the source is
simplified and the total number of semiconductor devices is reduced by
adding a resistor with one end connected to the centertap of the output
transformers of the oscillators, while the other end is connected to the
ground line.

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PASECHNIK, M. V., KORZH, I. A., KASHUBA, I. Ye., MISHCHENKO, V. A., PRAVDIVYY,
N. M., and SANZHUR, I. Ye., Institute of Physics of the Academy of Sciences
Ukrainian SSR

"Study of the Elastic Scattering of Neutrons in the 0.3-4.1 Mev Energy Region
by Ti and Cr Nuclei Using the Optical Model of the Nucleus"

Moscow, Yadernaya Fizika, Vol 11, No 5, May 70, pp 958-966

Abstract: The angular distributions of neutrons elastically scattered by Ti and Cr nuclei were measured over the angles 20-145° for neutron energies 2, 2.5, and 3 Mev, and data are given on the polarizing capacity of these nuclei for neutron energies of 1.5 and 2.0 Mev. The data are compared with the angular distributions of elastically scattered neutrons and with polarization occurring under elastic scattering as calculated on the basis of the six-parameter optical model of the nucleus. The purpose of this comparison was to make a systematic study of the variation with energy of the parameters of the optical potential, which function describes the interaction between the neutron and the nucleus. The values of the optimal parameters V_c and W_c were obtained by a least-squares fitting of data on the angular distributions of elastically scattered neutrons.

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PASECHNIK, M. V., et al, *Yadernaya Fizika*, Vol 11, No 5, May 70, pp 958-966

A comparison of calculated and experimental total cross sections showed satisfactory agreement between the two. The values of the optimal parameters of the optical model were calculated by a three-parameter analysis; the forms of the angular distributions calculated by the three-parameter variation method did not greatly differ from the angular distributions calculated with a two-parameter variation. This is said to indicate that the parameters of the optical potential most sensitive to the magnitude and form of the angular distributions are the values of the real and imaginary parts of the central potential.

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1/2 021

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--DETERMINATION OF ISOTOPE CONTENT OF EU AND IR BY USING THERMAL
NEUTRON METHOD -U-
AUTHOR-(04)-VASILYEV, S.S., VELYUS, L.M., KURZH, P.O., FOMENKO, V.T.

COUNTRY OF INFO--USSR

K

SOURCE--AT. ENERG. (USSR); 28: 65-7 (JAN 1970)

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--THERMAL NEUTRON, NEUTRON ABSORPTION, RADIATION INTENSITY,
EUROPIUM ISOTOPE, IRIDIUM ISOTOPE, QUANTITATIVE ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1979/1829

STEP NO--UR/0089/707026/010/0065/0067

CIRC ACCESSION NO--AP0048132

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--16 OCT 70

CIRC ACCESSION NO--AP0048132

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A THERMAL NEUTRON ABSORPTION METHOD WAS DEVELOPED FOR THE DETERMINATION OF EURUPIUM AND IRIDIUM ISOTOPES. GRAPHS FOR DETERMINING PRIME151 EU AND PRIME191 IR SPECIMEN RELATIVE INTENSITIES OF NEUTRON PASSAGE THROUGH THE SPECIMENS VS ISOTOPIC CONCENTRATION. THE ABSOLUTE STANDARD ERRORS FOR DETERMINATIONS OF PRIME151 EU WAS 0.22 AND 0.43PERCENT WITH ISOTOPE CONCENTRATIONS OF 0 TO 30 AND 30 TO 100PERCENT, RESPECTIVELY, AND FOR PRIME191 IR IT WAS 0.85PERCENT WITH CONCENTRATIONS OF 5.7 TO 100PERCENT. CURATION OF THE ANALYSIS WAS 30 MIN.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--BASIC PRINCIPLES OF SALT EXCHANGE BETWEEN OCEAN AND ATMOSPHERE -U-

AUTHOR--(02)-BRUEVICH, S.V., KORZH, V.D.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970,190 (5). 1210-1213

DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--OCEAN, ATMOSPHERE, ATMOSPHERIC EVAPORATION, SALT WATER,
BOUNDARY LAYER, BOUNDARY LAYER TRANSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY PEEL/FRAME--1986/1102

STEP NO--UR/0020/10/190/005/1210/1213

CIRC ACCESSION NO--AT0103020

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--19SEP70

CIRC ACCESSION NO--AT0103020

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TRANSFER AND METAMORPHISM OF OCEANIC WATER SALTS IN ATM. OCCURRED BOTH (1) DURING STORM (FOAM FORMATION) AND (2) BY EVAPN. FROM THE CALM SURFACE OF OCEAN AT NORMAL TEMPS. THE SALTS IN (2) ARE DELIVERED INTO ATM. IN MOLECULARLY DISPERSED STATE. THE QUAL. CHANGES IN THE ION SALT COMPN. OF SEA WATER IN BOTH CASES ARE OF THE SAME ORDER BECAUSE THE EVAPN. UNDER STORM AND CALM CONDITIONS OCCURRED IN THE BOUNDARY LAYER BETWEEN OCEAN AND ATM. THE RELATIVE AMTS. OF IONS IN THE OCEANIC WATER (NA IS LARGER MG IS LARGER THAN CA IS LARGER THAN K AND CL IS LARGER THAN SO SUB4 IS LARGER THAN CO SUB3) CONTROL THE SAME ORDER AND IN LAB. DISTILLATES. THE COEFFS. OF ION TRANSFER FOR DISTILLATES AND RAIN WATERS OVER THE OCEAN, IN WHICH THE EFFECT OF RELATIVE AMTS. OF IONS IN UNDERLYING OCEANIC WATER IS EXCLUDED, HAD A DIFFERENT FORM: CA IS LARGER THAN MG, K IS LARGER THAN NA AND CO SUB3 IS LARGER THAN SO SUB4 IS LARGER THAN CL. THIS SEQUENCE OF RELATIVE AMTS. OF IONS IF TYPICAL OF THE BOUNDARY LAYER BETWEEN OCEAN AND ATM. AND REFLECTS THE CHARACTER OF ITS CHEM. CD4PN. THIS ORDER AGREES WELL WITH THE VALUES OF ION RADII BY GOLDSCHMIDT AND, IN GENERAL FORM, WITH RULE ON THE ION ADSORPTION BY K. K. GEIOROITS (1955), I. E. AS DEPENDENT ON THE VALENCE AND AT. WT.

UNCLASSIFIED

USSR

UDC 621.791.763.1.011

KORZH, V. N., MEDKO, B. V., and ZHDANOV, I. M., Kiev Polytechnic Institute

"The Determination of the Magnitude of the Zone of Plastic Deformations in Spot Welding of Thin-Sheet Constructions"

Kiev, Avtomaticheskaya Svarka, No 1, Jan 72, pp 14-16

Abstract: The effect of the dimensions of welded members of low-carbon steel on the magnitude of the zone of a residual plastic deformations was investigated and a simplified method for its calculation is suggested. The method takes into account the distributions of the temperature from spot heating and of the maximum temperature on the edge of the weldable member, which depends on the section of the member. The results are discussed on the basis of graphs showing the distribution of maximum temperatures on specimens spot welded in their centers under different conditions and the calculated and experimental values of the radius of the zone of residual plastic deformations. Their comparison shows a satisfactory consistency, the average relative magnitude of the error being in the limits of 7-14%. Three illustrations, seven bibliographic references.

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172 028 UNCLASSIFIED PROCESSING DATE--23 NOV 70
TITLE--METHOD OF DETERMINING RESIDUAL STRESSES IN THE AXIALLY SYMMETRICAL
HEATING OF THIN PLATES -U-
AUTHOR-(03)-ZHDANOV, I.M., KORZH, V.N., VASILENKO, YU.A.

COUNTRY OF INFO--USSR 

SOURCE--ZAVOD. LAB., 1970, 36, (2), 213-215

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--THERMAL STRESS, STRESS ANALYSIS, FLAT PLATE, METAL HEATING,
STRAIN GAGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0307

STEP NO--UR/0032/70/016, 002/0213/0215

CIRC ACCESSION NO--AP0129539

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129539

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD OF STUDYING THE RESIDUAL STRESSES IN THIN METAL PLATES AND WELDS ARISING FROM THE AXIALLY SYMMETRICAL HEATING OF THE LATTER IS DESCRIBED. THE METHOD IS BASED ON THE USE OF A SPECIAL ANNULAR RESISTANCE WIRE WHICH RESPONDS DIRECTLY TO THE STRESSES IN THE MATERIAL. THE PROCEDURE TO BE ADOPTED IN CALIBRATING THIS DEVICE IS INDICATED. RESIDUAL STRESSES AT POINTS DEVIATING BY VARIOUS DISTANCES FROM THE HEATING AXIS MAY BE DETERMINED BY DRILLING SMALL HOLES AT THE CORRESPONDING LOCATIONS.

UNCLASSIFIED

KORZHAKIN, A.N.

RJ

OPTICAL MEASURING OF THE RADIATION PATTERN OF A VARIABLE PROFILE ANTENNA OPERATING IN THE MILLIMETER REGION
V. M. Slobodchikov and V. N. Slobodchikova of the Leningrad Branch of the Federal Astrophysical Observatory of the USSR
Academy of Sciences, Moscow, Institute Vavilov, 1971, No. 5, 1971, Submitted
Zvezdony - Radiotekhnika, Moscow, 1971, No. 5, 1971, Submitted
II October 1972. Ed. 557544

100-3925
7 SEP 93

CIA

Methods of optical modeling of wave-like processes have received the widest dissemination recently; among them of these methods, the laser (OKG) - has become one of the most popular and widespread instrument of laboratory practice. The beam of coherent light which the laser generates has proved to be adequate in power to provide quantitative measurements of an experimental facility. The extremely small relative size of the directivity properties of such narrow-beam antennas as variable-profile reflector radiotelescopes must be studied. The Large Pulsed Radiotelescope must be studied. The

scope, which is being built, are examples of such antennas. Thanks to the structural features of such devices (the freedom of travel for each section), which have been given the name variable-profile antenna (VPA), they can be operated in various modes. However, these modes, when changing operating modes only in optical models, since the principal APP time is devoted to making radio observations under the astrophysical program.

In particular, study of APP operation in the Hartmann system, the central portion of the variable-profile reflector as the source of radio-frequency radiation is eliminated [7]. In this case it becomes possible to determine the position of the

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UDC 531.8

ALABUZHEV, P. M., KASHLYAYEV, N. P., KORZHAVIN, G. N., SHPIGEN'BURD, I. YA.

"Stability Study of the Operating Process of an Electropneumatic Mechanism
of Shock Action"

V sb. Dinamika mashin (Machine Dynamics -- Collection of Works), Moscow,
1969, pp 22-26 (from RZh-Mekhanika, No 5, May 70, Abstract No 6A220)

Translation: The stability of the solution of a second order nonlinear differential equation which describes the operation of an electropneumatic shock mechanism under certain simplifying assumptions is investigated. Many papers have been devoted to the problem of calculating the operating process of a mechanism in which the authors started from the assumption that the periodic motion found by them was stable; it was then assumed that the quantity of air between the head and the piston was constant and as the load on the drive shaft increased to a nominal level the angular velocity of rotation of the shaft was unchanged. Actually, these quantities change slightly in the course of one cycle but it is unknown what condition these small changes in these quantities must satisfy for the periodic solution obtained to be stable. The given paper is devoted to problems of stability in the sense of A. M. Lyapunov and to stability for constantly acting perturbations for periodic motions applicable to an electropneumatic mechanism of shock action. 11 references. Authors abstract.

1/2 051 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--MECHANICAL AND THERMOMECHANICAL PROPERTIES OF POLYIMIDE FIBERS -U-

AUTHOR--(05)-OPRITS, Z.G., KUDRYAVTSEV, G.I., KORZHAVIN, L.N., GINZBURG,
B.M., FRENKEL, S.YA.
COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (3), 61-4

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--SYNTHETIC FIBER, POLYIMIDE RESIN, PLASTIC MECHANICAL PROPERTY,
PYROMELLITIC ACID, ORGANIC SULFUR COMPOUND, ETHER, TENSILE STRENGTH,
ELECTRON BOMBARDMENT, UV RADIATION, NYLON, POLYESTER RESIN, CRYSTALLINE
POLYMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605012/E03 STEP NO--UR/0183/70/000/003/0061/0064

CIRC ACCESSION NO--AP0140306

UNCLASSIFIED

2/2 051

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140306

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTL. FIBERS WERE PREPD. BY THE POLYCONDENSATION OF PYROMELLITIC DIANHYDRIDE WITH: (P,H SUB2 NC SUB6 H SUB4) SUB2 O, (P,H SUB2 NC SUB6 H SUB4) SUB2 S, OR P,C SUBS H SUB4 (OC ETHERS) OR THIOETHERS. THE FIBERS RETAINED THEIR INTRINSIC TENSILE STRENGTH AT BREAK (SIGMA) AFTER HEATING IN THE AIR AT 200DEGREES FOR 216 HR, AND LOST SIMILAR TO 30PERCENT SIGMA UNDER THE SAME CONDITIONS BUT AT 300DEGREES. THE FIBERS RESISTED BOILING IN 10PERCENT H SUB32 SO SUB4 AND CONCO. ACIDS DEGRADED THEM. THE FIBERS RESISTED THE BOMBARDMENT WITH FAST ELECTRONS OR UV IRRAD. BETTER THAN NYLON 6 OR POLYESTERS. X RAY DIFFRACTION SHOWED THAT THE FIBERS WERE CRYST.

UNCLASSIFIED

USSR

UDC: 621.372.061.3

KORZHAVIN, Yu. M.

"Synthesis of Nonlinear Resistive Converters"

Kiev, IVUZ: Radioelektronika, Vol 15, No 3, Mar 72, pp 398-399

Abstract: A graphic-analytic method is proposed for synthesizing nonlinear resistive converters for the case where a pulse $U(t)$ is to be produced from a certain voltage $U_0(t)$. It is shown that in a practical circuit, the voltage $U_0(t)$ must be converted to the appropriate waveform by adding a correcting stage before the input to the nonlinear converter. This procedure must be repeated, adding additional correcting stages, until the output pulse $U(t)$ is obtained with the required accuracy. One or two stages may be sufficient when the required accuracy is not particularly high and the characteristic of the converter is not excessively complex. It is noted that the method of adding correcting stages is even more convenient for synthesizing converters which contain reactive elements since these circuits require selecting the parameters of linear elements in addition to the characteristics of nonlinear elements.

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USSR

UDC: 517.946

KORZHAVINA, M. V.

"Solution of the NE [sic] Problem for the Equation $u_{xx} + u_{yy} + \frac{p}{x} u_x = 0$

V sb. Materialy Itog. nauchno. konferentsii, Kuybyshev, gos. nauc.-tekhn. izd-t, 1970.
Vyssh. matematika (Results of the Scientific Conference, Kuybyshev State
Pedagogical Institute, 1970, Higher Mathematics) Kuybyshev, 1970, pp 25-31
(from RZh-Matematika, No. 3, March 71, Abstract No. 3B439)

Translation: Using the method of integral equations, involving the results of his earlier work (RZhMat, 1969, 128404), the author solves, for the equation $u_{xx} + u_{yy} + (p/x)u_x = 0$ (p is a real constant; the interval in which it is contained is not indicated), a boundary value problem in which the region where the solution is sought is the half-zone $0 < x < 1, y > 0$. N. Flaysher

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1/2 026 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--THEORY OF AN OPTICAL RESONATOR WITH LENSES -U-

AUTHOR--(02)--KORZHENEVICH, I.M., RATNER, A.M.

COUNTRY OF INFO--USSR

SOURCE--UKRAINSKII FIZICHESKI ZHURNAL, VOL. 15, FEB. 1970, P. 191-200

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RESONATOR, OPTIC PROPERTY, SURFACE PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1470

STEP NO--UR/0185/70/015/030/0191/0200

CIRC ACCESSION NO--APO112470

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0112470

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL STUDY OF A PARTIALLY FILLED OPTICAL RESONATOR CONTAINING AN ACTIVE MEDIUM AND LENSES. THE CAUSTIC SURFACE, THE PRINCIPAL RADIATION CHARACTERISTICS, THE NUMBER OF TRANSVERSE MODES, THE WORKING VOLUME OF THE ACTIVE MEDIUM, THE WORKING SURFACE OF THE REFLECTORS AND THE ANGULAR DIVERGENCE ARE DETERMINED FOR THIS RESONATOR. ALSO DETERMINED ARE THE OPTIMAL CONDITIONS FOR CORRECTING ANGULAR DIVERGENCE AND FOR RADIATION FOCUSING. THE METHOD APPLIED IN THE STUDY IS ALSO APPLICABLE IN AXIALLY SYMMETRICAL RESONATOR DESIGNS WITH ARBITRARY NUMBERS OF PLANE OR SPHERICAL REFRACTING SURFACES. FACILITY: AKADEMIJA NAUK UKRAINS'KOJ RSR, FIZIKO-TEKHNICHNII INSTITUT NIZ'KIH TEMPERATUR, KHARKOV, UKRAINIAN SSR.

UNCLASSIFIED

1/2 043 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--OPTIMAL CONDITIONS FOR NARROWING THE SPECTRUM OF A LASER WITH
STRONGLY DEGENERATE MODES -U-
AUTHOR-(04)-KURZHENEVICH, I.H., RATNER, A.M., SLODOVYEV, V.S., TYUNOVA,
T.I.
COUNTRY OF INFO--USSR
K
SOURCE--RADIOTEKHNIKA I ELEKTRONIKA, VOL. 15, APR. 1970, P. 821-823
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS
TOPIC TAGS--LASER RADIATION SPECTRUM, RESONATOR, MULTIMODE LASER, LASER
BEAM COHERENCE, LINE WIDTH

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1471 STEP NO--UR/0104/P0/015/000/0821/0823
CIRC ACCESSION NO--AP0118460
UNCLASSIFIED

2/2 . 043

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0118460

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE INFLUENCE OF THE RESONATOR'S GEOMETRICAL PARAMETERS ON THE NUMBER OF TRANSVERSE MODES IN A SOLID STATE LASER HAVING LENSES WHICH ARE USED TO OBTAIN SUFFICIENT ANGULAR DIVERGENCE FOR TOTAL SPECTRAL OVERLAP OF THE EMITTED LONGITUDINAL MODES (STRONGLY DEGENERATE CASE). IT IS SHOWN THAT THE DEPENDENCE OF THE NUMBER OF TRANSVERSE MODES ON THE RESONATOR PARAMETERS HAS A SHARP MAXIMUM FOR A RESONATOR WHOSE LENGTH IS LARGE IN COMPARISON WITH THE LENGTH OF THE ACTIVE ELEMENT. THIS MAXIMUM CAN BE USED FOR EXPERIMENTAL PRODUCTION OF A STABLE REGULAR KINETIC MODE OF EMISSION WITH A NARROW SPECTRAL LINE.

UNCLASSIFIED

USSR

UDC: 51:621.391

KORZHIK, V. I., YANISHEV, Sh. T.

"Estimates of the Probabilities of Errors in the Case of Analog Decoding in Gaussian Channels"

V sb. Vopr. Kibernetiki (Problems of Cybernetics--collection of works), vyp. 45, Tashkent, 1971, pp 156-180 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V361)

Translation: Code words of binary code (n, k) with alphabet $(1, -1)$ and minimum Hamming distance d_{\min} are transmitted over a semi-continuous channel with additive noise having Gaussian distribution $(0, \sigma^2)$. Estimates from above are determined for the probability of a decoding error for optimum reception "on the whole". A comparison is given of estimates of the probability of a decoding error in the given code for the case of reception "on the whole" and in the case of reception "by elements". V. Yegorin.

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USSR

UDC 51:621.391

KORZHIK, V. I.

"Problem of Sufficient Information on Statistics of Errors in Channels with Memory"

Ispol'z. Izbytochnosti v Inform. Sistemakh, [Use of Redundancy in Information Systems -- Collection of Works], Leningrad, Nauka Press, 1970, pp 248-265
(Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V369).

No Abstract.

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D.S. KORZHINSKIY

Acc. Nr.: AP0042579

Ref. Code: ZLR 9067

JPRS SD/62

Petrography and Chemical Composition of Lavas in Submarine Ridge

(Abstract: "Petrography and Chemical Composition of Spherulitic Lavas in the Central Indian Ocean Ridge," by V. I. Chernysheva, Institute of Oceanology; Moscow, Izvestiya Akademii Nauk SSSR, Seriya Geologicheskaya, No 2, 1970. pp 20-26)

During 1964-1965 the Institute of Oceanology Academy of Sciences USSR carried out geological-geophysical investigations in the Indian Ocean (36th voyage of the "Vityaz"). While dredging in the Central Indian Ocean Ridge at a depth of 3,080 m specialists obtained fragments of basalts with thick glassy crusts which represent fragments of pillow and spherulitic lavas. A microscopic description of olivine basalts is given. The plagioclase in these samples is represented by labradorite bytownite. In chemical composition the spherulitic lavas are low-potassium tholeiitic basalts. The conclusion drawn by D. S. Korzhinsky that the transvaporization of basaltic magma does not occur during underwater outpourings of lava is confirmed. During 1967, on the second voyage of the research vessel "Akademik Kurchatov" in the rift zone of the Indian Ocean-Arabian Sea Ridge, a dredge collected greenstone-modified basic extrusives: the plagioclase in these samples was represented by albite. These rocks differ sharply from the spherulitic

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lavas in which traces of metamorphism are absent. It is concluded that there are two stages in basic volcanism separated by a prolonged stage of greenstone metamorphism and possible tectonic movements.

19760567

Acc. Nr.: AP0042145Ref. Code: UR0026

JPRS 50162

New Institute for Experimental Mineralogy

(Complete translation: "New Institute," unsigned; Moscow, Priroda, No 2, 1970, p 115)

A new institute, The Institute of Experimental Mineralogy, has been organized within the Department of Geology, Geophysics and Geochemistry of the USSR Academy of Sciences. It will be headed by Academician D. S. Korzhinskii. The institute will be responsible for conducting experimental physicochemical investigations of processes involved in mineral formation, the form and conditions of the migration of matter under high pressures and temperatures, the investigation of the behavior of natural substances and their artificial analogs under high temperatures and pressures in connection with the study of the deep structure of the earth's crust and upper mantle, and the development of new methods for the synthesis of industrially important minerals. [1]

Reel/Frame
19760049

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Acc. Nr: AP0044693

Ref. Code: UR 0463

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, № 1,
pp 62-68INHIBITION OF LYSYL TRANSFER RNA SYNTHETASE FROM BAKERS
YEAST BY PERIODATE-OXIDIZED tRNA

V. A. KORZHOK

Institute of Organic Chemistry, Siberian Branch of the Academy of Sciences,
USSR, Novosibirsk

Transfer RNA from bakers yeast was fractionated on DEAE-Sephadex. Using fractions of tRNA enriched and deprived of lysine acceptor activity it was found that yeast lysine tRNA oxidized by periodate competitively inhibited the synthesis of lysyl tRNA by partially purified yeast lysyl-tRNA synthetase. The reduction of oxidized tRNA by sodium borohydride strongly decreased the inhibitory activity. The deamination of both the native and oxidized tRNAs by sodium nitrite resulted in decrease of acceptor and inhibitory activity respectively; the latter one decreasing to a greater degree than the former. The lysine dependent ³²P-ATP exchange was not affected by periodate-oxidized tRNA.

REEL/FRAME
19771427

S.V. hc

1/2 038	UNCLASSIFIED	PROCESSING DATE--13NOV70
TITLE--A HELICOPTER IN THE NAPSACK -U-		
AUTHOR--KORZHUKOV, V.		
COUNTRY OF INFO--USSR		
SOURCE--SOTSIALISTICHESKAYA GAZETA, JUNE 16, 1970, P 4, COLS 3-8		
DATE PUBLISHED--16JUN70		
SUBJECT AREAS--AERONAUTICS, MATERIALS		
TOPIC TAGS--HELICOPTER, HELICOPTER DESIGN, HELICOPTER ENGINE, HELICOPTER ROTOR, REINFORCED PLASTIC, GLASS		
CONTROL MARKING--NO RESTRICTIONS		
DOCUMENT CLASS--UNCLASSIFIED	PROXY REEL/FRAME--3004/0410	STEP NO--UR/0747/70/000/000/0004/0004
CIRC ACCESSION NO--AN0131061		

2/2 038

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--ANO131061

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STUDENTS DESIGN BUREAU OF THE MOSCOW AVIATION INSTITUTE (MAI), HEADED BY V. PYATOV, IS CURRENTLY WORKING ON THE DESIGN OF A PORTABLE HELICOPTER POWERED BY A GASOLINE SAW ENGINE "DRUZHBA". WHEN CONSTRUCTED, THE HELICOPTER WILL WEIGH 52 KG AND WILL BE ABLE TO TRANSPORT A 100-KG CARGO A DISTANCE OF 200 KM. THE AERODYNAMIC CALCULATIONS WERE MADE BY ALEKSANDR MIGACHEV, GENNAIY KUZNETSOV, A THIRD YEAR STUDENT, PARTICIPATED IN THE DEVELOPMENT OF THE POWER PLANT, AND ALEKSANDR KRASNIKOV DEVELOPED THE TECHNOLOGY FOR LUBRICATING ONE PIECE GLASS REINFORCED PLASTIC ROTORS. A STUDENT, V. ANTIPOV, IS WORKING ON ANOTHER HELICOPTER MODEL WITH A TWO BLADED MOTOR THAT WILL WEIGH ABOUT 100 KG, WILL BE ABLE TO FLY AT AN ALTITUDE OF 3500 METERS. ITS RANGE WILL BE 265 KM. WORK HAS BEEN ALSO STARTED ON STILL ANOTHER HELICOPTER DESIGNED TO CARRY 2 TO 3 PASSENGERS.

UNCLASSIFIED

USSR

UDC: 537.312.62

BARANOV, I. A., BYCHKOV, Yu. F., KORZHOV, V. P., MAL'YSEV, V. A., GLAVGORODSKIY, N. P., SEMULEVICH, R. S.

"Effect of Rhodium on the Superconductive Properties of Zirconium and Some of its Alloys"

Moscow, Sverkhprovodimye splavy i soyediny.--esbornik (Superconductive Alloys and Compounds--collection of works), "Nauka", 1972, pp. 140-147 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D566 [russified])

Translation: An investigation was made of the effect which dispersed segregations of a phase having a higher critical temperature than the matrix have on the critical current. Additions of rhodium increase the T_c of zirconium to 6-7 K with formation of solid-solution bcc, and up to 11-12 K with formation of Zr_2Rh . Critical currents were measured on ternary alloys Zr-Mo-Rh and Zr-Mn-Rh. After annealing at 450°C, when only α -phase was segregated, there was a considerable increase in the critical current. After annealing at 550°C, when the larger segregations of α -phase were accompanied by segregations of compound Zr_2Rh which has a high T_c , the critical current was appreciably lower. The results show a higher positive

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USSR

BARANOV, I. A. et al., Sverkhprovodimye splavy i soyedinn., "Nauka", 1972, pp 140-147

effect on the critical current of dispersed segregations which are non-superconductive at 4.2 K in a superconductive deformed matrix. Five illustrations, one table, bibliography of four titles.

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• USSR

KORZHUYEV, P. A.

Evolvutsiya Gravitatsiya Nevesomost' (Evolution, Gravitation, Weightlessness)
Moscow, "Nauka," 1971, 152 p

Translation: Mastering space confronts the biologist with a most difficult problem - the study of weightlessness. Interplanetary flights will occur under conditions in which the gravitational field is practically non-existent; that is, the animals and plant life accompanying man will encounter a weightless state for months at a time, and even for years. The author of this book, a well-known specialist in the field of comparative physiology and biochemistry, gives an account of his concepts, according to which the forces of gravitation have played an important role in the evolution of life on our planet. Issuing from these conclusions, he takes into consideration the probable consequences of a long stay by men and animals in a state of weightlessness and emphasizes that weightlessness is not only a cosmic phenomenon, but it also an earthbound one. Aquatic organisms (including whales, those giants of the sea) are in a state practically resembling that of weightlessness.

This book is of interest to a wide circle of biologists + biochemists, physiologists, physicians, and students.

The book being brought to the attention of the reader, written by professor
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USSR

KORZHUYEV, P. A., *Evolyutsiya Gravitatsiya Nevesomost'*, Moscow, "Nauka," 1971,
152 p

P. A. Korzhuyev, concerns one of the most interesting aspects of the problem of evolution - the role of gravitation in the phylogensis of the animal kingdom - of the continuous action of the earth's gravitational field on an organism. Based on wide views of a general biological nature, the author traces the changes brought about by the transition of living creatures from the first cradle of life - the peaceful ocean - to dry land. This passage was a qualitative leap into a hypergravitational environment. The author justifiably points out that the transition to other conditions of existence, which produce gross changes in the physiological morphology of organisms, attracted no great attention on the part of physiologists, but because the traditional monopoly of morphology, as a consequence of which the well-known one-sidedness was acquired. Physiologists and biochemists elucidated somewhat more, but still insufficiently, the changes in semi-aquatic animals (having passed from a hypergravitational to a hypogravitational environment), especially mammals.

P. A. Korzhuyev in his book dwells at great length on skeletal changes, and on the principal organ of blood production - bone marrow, which are associated with the increased effect of gravitation under conditions of terres-

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USSR

KORZHUYEV, P. A., Evolyutsiya Gravitatsiya Nevesomost', Moscow, "Nauka,"
1971, 152 p

trial life. The intensification of the energy exchange caused by these changes required in its turn an increased delivery of oxygen to the tissues and an increased amount of blood and its oxygen content. Convincing proof of the expressed point of view is provided by changes in semi-aquatic animals (reduction of the skeleton and of bone marrow, a diminished synthesis of hemoglobin in bone marrow, and increased skeletal musculature).

In connection with the mastery of space, the problem of the influence of lengthy weightlessness acquires not only a theoretical significance but a purely practical one as well. However, interest in P. A. Korzhuyev's book is not limited to this matter. Due to the wide erudition of the author, the book will be read with profit and interest by a large circle of biologists - both evolutionists and simply curious readers, whose number has so grown in our country as a result of the rise in the cultural level of the nation. This alone is one of the greatest conquests of our social system.

Academician V. V. Parin

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Preface

Instead of an introduction

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5

USSR

KORZHUYEV, P. A., *Evolyutsiya Gravitatsiya Neveschost'*, Moscow, "Nauka,"
1971, Moscow, 152 p

Chapter I	9
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4/4

Rare Metals

USSR

K

UDC 622.7-4-15

TARASOVA, T. B., TOMIN, V. S., and KORZILOVA, A. P.

"Study of Finishing Coarse Auriferous Concentrate of the Komzuar Rudnik Plant"

Moscow, Tsvetnyye Metally, No 2, Feb 70, pp 79-81

Abstract: This article contains a discussion of research performed to improve the gold recovery from the coarse auriferous concentrate of the Komzuar Rudnik Plant. The mean gold content in the coarse concentrate was 138 grams/ton. It was determined by analysis that 96-98% of the gold was in the form of free grains, 39% of which were concentrated in the 0.21 + 0.15 mm fraction. About 80% of the gold was in the 0.5 mm fraction. The mineral composition and large amount of free gold are favorable for recovering the gold by amalgamation and finishing; the concentrate are favorable for recovering the gold by amalgamation and finishing; the concentrate by gravitation and electrical methods. Various finishing procedures are described, but it is concluded that in recovering gold from the coarse concentrate directly by amalgamation by using any of the investigated versions, the results are practically identical. However, after finishing the concentrate by gravitation or electrical methods, the amount of material going to amalgamation is reduced by 18-15 times. The gravitation method is considered the more efficient of the two finishing procedures since it is simple and insures higher gold concentration.

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1/2 011 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--REFINING OF A COARSE GOLD CONTAINING CONCENTRATE AT A CONCENTRATION
MILL OF THE KOMMUNAROVSKIY MINE -U-
AUTHOR-(03)-TARASOVA, T.B., TONIN, V.S., KORZILLOVA, A.P.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(2), 79-81

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--GOLD, AMALGAM, METAL REFINING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0740

STEP NO--UR/0136/70/043/002/0079/0081

CIRC ACCESSION NO--AP0107282

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--02 OCT 70

CIRC ACCESSION NO--AP0107282
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AV. AU CONTENT IN THE COARSE CONC. STUDIED WAS 138 G-TON. SOME 96.8PERCENT OF THE AU IS REPRESENTED AS FREE PARTICLES, 39PERCENT OF WHICH ARE MINUS 0.21 PLUS 0.15 MM. THE AU IS IN THE FORM OF PLATELETLIKE OR IRREGULAR PARTICLES. MOST OF THE PARTICLES HAVE PITTED SURFACES WITH THE DEPRESSIONS FILLED WITH VERY FINE QUARTZ PARTICLES. APPROX. 80PERCENT OF THE AU IS PRESENT IN THE MINUS 0.5 MM FRACTION. THE MINERAL COMPN. AND THE LARGE AMT. OF FREE AU WERE FAVORABLE FOR EXTN. OF AU BY AMALGAMATION AND REFINING OF THE CONC. BY GRAVITY AND ELECTROSTATIC METHODS. APPROX. 95.8PERCENT OF THE AU CAN BE EXTD. BY AMALGAMATION. PRIOR HEAT TREATMENT OF THE CONC. DOES NOT INCREASE THE EFFECTIVENESS OF THE AMALGAMATION OF AU. A PRODUCT CONTG. 1300-2500 G/AU-TON CAN BE CONTAINED BY ELECTROSTATIC SEPN. OF THE CONC. GROUND TO 0.3-0.21 MM. THE EXTN. OF AU FROM THE ROUGH CONC. DIRECTLY BY ANALGAMATION, WITH REFINING OF THE CONC. ACCORDING TO EITHER OF THE TWO METHODS IS PRACTICALLY THE SAME. HOWEVER, AFTER REFINING THE CONC. BY THE GRAVITY OR THE ELECTROSTATIC METHOD, THE AMT. OF MATERIAL ENTERING THE AMALGAMATION PROCESS IS DECREASED BY 15-18 TIMES. THE GRAVITY METHOD IS MORE EFFICIENT, SINCE IT IS SIMPLE AND PRODUCES A HIGHER CONCN. OF AU.

UNCLASSIFIED

USSR

UDC 621.376.234

KORZINKIN, V. A., and PYSHKINA, N. I.

"Limiting Characteristics of a Semiconductor Photodetector With Traveling Wave and Carrier Drift"

Poluprovodnikovyye Pribory v Tekhnike Elektronsvyazi (Semiconductor Instruments in Electrical Communication Technology), Moscow, "Svyaz", No 7, 1971,
pp 210-218

Abstract: This article contains a full list of conventional symbols used by the authors in treating the problem. Using a mathematical approach and supporting their findings graphically the authors make several conclusions regarding a solution. They find that the maximal frequency band of the device is 10^{10} Hz. The method they used for computing losses, under the condition that the space factor of the medium is introduced for the semiconductor, gives values which agree with the experimental ones for the solid-state analog of the traveling-wave tube. They find that by allowing for the losses they are able to estimate the maximal value for the area of amplification as 10^{12} - 10^{13} Hz. For small losses (high-resistance semiconductor and low temperatures) they find it is possible to increase the area of amplification by

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USSR

KORZINKIN, V. A., and PYSHKINA, N. I., Poluprovodnikovyye Pribory v Tekhnike Elektrosvyazi (Semiconductor Instruments in Electrical Communication Technology), Moscow, "Svyaz', No 7, 1971, pp 210-218

increasing the length of the delay system. The article contains 2 illustrations and 14 bibliographic entries.

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USSR

UDC 535.215.1:621.383.4

KORZINKIN, V. A., and PYSHKINA, N. I.

"Limiting Characteristics of Semiconductor Photodetector With Traveling Wave and Carrier Drift"

V sb. Poluprovodn. pribory v tekhn. elekrosvyazi (Semiconductor Devices in the Technology of Electrical Communications), Issue 7, Moscow, "Svyazi," 1971, pp 210-218 (from RZh-Elektronika i yeye primeneniye, No 8, August 1971, Abstract No 8B259)

Translation: An evaluation is conducted of the limiting parameters of a semiconductor photodetector with a traveling wave and a carrier drift charge. A value of 10^{13} Hz is obtained for the limiting frequency band. A calculation is made of the power losses in the photodetector and an evaluation is achieved of the maximum value of the product of the amplification factor G and the width of the frequency band π . The values $G\pi = 10^{12} - 10^{15}$ Hz are obtained. It is shown that in the case of small losses (high-resistance semiconductors, low temperature) the magnitude of $G\pi$ may be increased because of the increased length of the retarding system of the photodetector. V.L.

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USSR

Recorders and Transducers UDC 621.382+621.385.65

KORZINKIN, V.A., SULTAN-ZADE, T.S.

"Approximate Theory Of One Scheme For A Light-Microwave Transducer"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works Of The Moscow Electrical Engineering Institute Of Communications), 1970, No [omitted], pp 15-18 (from RZh-Elektronika i vye primeneniye, No 11, November 1970, Abstract No 11#195)

Translation: An approximate theory is considered for a photodetector which provides a semiconductor analog of a traveling-wave tube, with a photocathode and consisting of a semiconductor close to which a retarding system is located. A voltage is applied to the semiconductor collinearly with which light modulated for some frequency falls on the input of the device. A signal of this frequency is removed from the output of the retarding system. An approximate solution of equations obtained for n-type Si with an impurity concentration of 10^{12} cm^{-3} made it possible to estimate a gain of $\approx 5000 \text{ db}$ on a 1-mm length of the retarding system. 4 ref. N.S.

1/1

USSR

UDC 669.721.042.6(088.8)

TAGAKIN, A. N., KORZNIKOV, V. M., BELKIN, G. I., ALONTSEV, V. S., PROVODNIKOV, A. A., MAZUROV, G. A., TITAYEV, I. A., PUTINA, O. A., MATSUT, N. V., BOCHKAREV, G. V., NAGIBIN, V. M.

"Method of Processing of Magnesium Ingots"

USSR Author's Certificate No 313908, filed 16/03/70, published 10/11/71,
(Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract
No 5 G248 P by G. Svetseva).

Translation: A method of processing of Mg ingots including transportation, cooling, mechanical working, washing, etching, drying and covering with a protective layer is proposed. In order to reduce the labor expenditures for the process and process time, the ingots are subjected to forced cooling to 450-100°, mechanically worked during transportation, and washed at 350-100°. This reduces labor consumption, decreases the time of the process, and increases the productivity of labor by 40-80%.

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Radiation Chemistry

UDC 669.017:539.16.04

USSR

KORZO, V. F., and CHEBOTARENKO, V. Ya., Moscow"Radiation Stimulated Conductivity of Quasimorphic Layers of the Pyrolytic Chromium Alloyed With Carbon"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, 1973, pp 34-37

Abstract: A change in electric characteristics has been noted in quasimorphic layers of pyrolytic chromium alloyed with atomic carbon during the process of the self-decomposition of the agents caused by irradiation with a stream of thermal neutrons. As the concentration of the neutron stream increases from 10^{13} to $5 \cdot 10^{16} \text{ n/cm}^2$, the films of the alloy chromium suddenly change their conductivity by several orders of magnitude. The nonlinear characteristics of the conductivity after annealing is related to the appearance of electrically active capture centers in the alloy chromium structure due to the presence of quasimorphic chromium and alloyed carbon atoms in the matrix.

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USSR

UDC 537.311.33(047.1)(47):548.25

KUROCHKIN, V.A., KURKHINEN, G.I., KORZO, V.F.

"Thin Dielectric Films In Modern Electronics"

V sb. Elektronika i yeye primenenije--Electronics And Its Applications--
Collection Of Works), Moscow, Izd-vo VINITI, 1971, pp 69-123

Abstract: This survey is devoted to problems of the theory of conductivity, the technology and the uses of thin dielectric films. In the first chapter some special features are considered of the processes of charge transfer in structures with dielectric layers, specifically in metal-dielectric-semiconductor structures. Special sections are devoted to tunneling, the Schottky and Poole-Frenkel effects, as well as the mechanism for formation of negative resistance. Particular attention is given to disordered systems. In the second chapter recent advances in the technology of preparing thin dielectric films are generalized. In particular, methods are considered of cathode sputtering and pyrolysis of hetero-organic compounds, and also the technology of preparing films of some new materials. Data are presented on the use of dielectric films as passivating and sealing layers. In the third chapter problems of the

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USSR

KUROCHKIN, V. A., et al., Elektronika i yeye primeneniye--Electronics And Its Applications--Collection Of Works, Moscow, Izd-vo VINITI, 1971, pp 69-123

creation of active elements on the basis of dielectric layers are set forth. Particular attention is given to bipolar elements with negative resistances which possess a high switching rate and in some cases a storage effect. The principal parameters are presented of elements based on semiconductor glasses. 6 fig. 3 tab. 218 ref.

2/2

USSR

UDC 537.511.33:54-185

KORZO, V.F., KURNCSOV, A.I.

"Nonlinear Conductivity Of P-N And P- Al_2O_3 -N Hybrid Heterojunctions"

Elektron.tehnika. Nauch.tehn.sb.Poluprovodn.pribory (Electronics Technology. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 3(60, pp 50-57 (from RZh--Elektronika i yeye primeneniye, No 11, Nov 1971, Abstract No 11B159)

Translation: The character is experimentally investigated of nonlinear electrical conductivity in film hybrid heterojunctions based on amorphous or partially crystalline films of SiO_2 , ZnO and chalcogenid glass with a thin dielectric base of Al_2O_3 . The technology for deposition of the films, the method of electrical forming, and the structure of standard specimens of heterojunctions are described, and the character is analyzed of the transfer of charge carriers in hybrid heterostructures based on amorphous films. Summary.

1/1

USSR

UDC 621.396.6-181.6

VORONIN, P. V., KORES, V. F.

"Microwire Resistance Welding in Miniature Elements of Instrument Building"

V sb. Mikronprovod i pribory appretivnye, (Microwire and Resistance welding --collection of works), vpt. 1, Krasnogorsk, 1971, pp 317-317 (from Zhurnal Radiotekhnika, No 6, Aug 71, Abstract No 8V229)

Translation: The paper points out the disadvantages of glued joints as applied to the bonding elements of microcircuits. A method is described for fastening vitrified resistors to microwire by means of resistance welding with microwire of small cross section. The optimum contacting conditions are determined by testing. A technique for making intersecting leads is considered. One illustration, one table, bibliography of four titles. N. S.

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USSR

UDC 621.385.032.21.001.5:537.533.2

KORZO, V.F.

"Emission Properties of Tunnel Cathodes With Pyroactivated Dielectrics"

Moscow, Radiotekhnika i Elektronika, Vol 15, No 2, 1970, pp 408-410

Abstract: A method for obtaining samples of tunnel cathodes using SiO₂ film is described. It is based on the pyrolytic reduction process of (OC₂H₅)₄Si vapors. Contrary to the method of thermal dissociation of the hetero-organic compounds in a vacuum, the hot reactor zone was irradiated by a mercury-vapor tube. The activating irradiation was used in the case of pyrolysis in the vacuum ~10⁻³ mm and in the reduction of tetratosilaine vapors in a mild flow of inert gas (Ar) at normal pressure. Satisfactory, with respect to quality, SiO₂ films on a ceramic backing with a metallic film of low-ohmic chromium (~0.5 ohm/cm²) can be obtained at ~500°C temperature. This is 250-300°C lower than the corresponding reduction temperatures in a vacuum or inert medium without irradiation. Typical current-volt characteristics of the diode current of the Cr-SiO₂-Al film

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USSR

KORZO, V.F., Radiotekhnika i Elektronika, Vol 15, No 2, 1970,
pp 408-410

Abstract: cathodes, with different oxide layer thicknesses, as well as the dependence of the emission current on diode voltage are presented in graphs. It is shown, that the limit current density of formed cathodes with pyroactivated dielectric can be increased up to $\sim 10^{-1} \text{A/cm}^2$, i.e., 2 times higher than that for ordinary SiO_2 tunnel cathodes. Orig. art. has: 2 figures.

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Acc. Nr.

AP0055107Abstracting Service:
CHEMICAL ABST.

Ref. Code

UR 0109

115792p Emission properties of tunnel cathodes with pyrolytically activated dielectrics. Korzo, V. F. (USSR). *Radiotekh. Elektron.* 1970, 15(2), 403-406 (Russian). A method is described for prep. film tunnel cathodes based on SiO_2 by using the technology of pyrolytic decompr. of Si(OEt)_4 vapors with the exposure of the hot zone of the reaction to powerful uv radiation of a Hg lamp. Satisfactory films can be deposited on a ceramic substrate with a metallic film of low-ohmic Cr at $\sim 510^\circ$. The current-potential characteristics are given for the diode current of film cathodes of the Cr-SiO₂-Al type. The dependence of the current on the voltage on the segment which corresponds to fields for the appearance of a significant emission current is very nonlinear. The emission current for a working vacuum of $\sim 10^{-6}$ mm and an anode voltage of ~ 100 V has an exponential dependence on the applied field. As the oxide layer thickness is decreased the value of the emission current shifts toward higher voltages on the cathode. Thus, the operating emission c.d. can be increased by a factor of 2 over the usual tunnel SiO_2 cathodes. GLJR

REEL/FRAME
19840314

C.I.C.

4

1/2 022	UNCLASSIFIED	PROCESSING DATE--13NOV70
TITLE--MECHANISM OF THERMAL AROMATIZATION -U-		
AUTHOR--(02)-MAGARIL, R.Z., KORZUN, N.V.		
COUNTRY OF INFO--USSR		
SOURCE--NEftePERERAS. NEFTekhim. (MOSCOW) 1970, (S), 43		
DATE PUBLISHED-----70		
SUBJECT AREAS--CHEMISTRY		
TOPIC TAGS--CYCLOHEXANE, THERMAL DECOMPOSITION, CHEMICAL REACTION, MECHANISM, CHAIN REACTION, BENZENE, THERMAL EFFECT		
CONTROL MARKING--NO RESTRICTIONS		
DOCUMENT CLASS--UNCLASSIFIED		
PROXY REEL/FRAME--3006/1088	STEP NO--UR/0318/70/000/005/0043/0048	
CIRC ACCESSION NO--A00136777		
UNCLASSIFIED		

272 022

UNCLASSIFIED

PROCESSING OUT 11-13NOV70

CIRC ACCESSION NO--APO134777

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CYCLOHEXANE (II) WAS DECOMPO. AT 540-650 DEGREES. AT LOW TEMP., THE DECOMPN. OF II OCCURRED VIA A NON CHAIN REACTION. CHAIN REACTIONS DEVELOPED WITH TEMP. INCREASE TO GIVE CRACKING PRODUCTS OF COMPLEX COMPN. [C SUB 6 H SUB 12] WAS NOT PRODUCED BY DEHYDROGENATION OF CYCLOHEXADIENE (III), BUT BY CRACKING OF II IN THE CHAIN MECHANISM.

FACILITY: TYUMEN, IND. ENST., TYUMEN, USSR.

UNCLASSIFIED

KORZUN, V. I.

Hydrometeorology

Law of Water in the USSR Hydrometeorological Service

(Article by Deputy Director of the Main Administration of Hydrology under the USSR Council of Ministers, Academician G. G. Grigor'yan, No. 6, 1972)

The most significant principles of the law on water are adopted by the USSR Government in the form of the Constitution, and the USSR Government has issued a decree in connection with this law.

The following are included within the most important principles:

state accounting system for natural waters with respect to the water cadaster;

standard of living and cultural demands of the Soviet people;

principles of the rational utilization of natural resources; the entire society to nature in scientific respects and consequences;

It is known that the problem of the environment is one of the primary problems of the far-reaching development of human society.

The advantages of the justly organized economic, political, economic and social system over the capitalist system in solving this problem will provide the socialist countries in the struggle against capitalism in the socialist countries to conservation of natural and atmospheric resources of all kinds and restoration of the environment.

Laws are passed to establish the legal foundations for the utilization and conservation of natural resources. Maintaining the relations between man and the natural environment is regu-

Acc. Nr: AP0043742

Ref. Code: UR 0050

PRIMARY SOURCE: Meteorologiya i Gidrologiya, 1970, Nr 3,
pp 3-11

FIVE YEARS OF THE INTERNATIONAL HYDROLOGICAL DECADE (IHD)

V. I. Kochub

The status of international collaboration in the field of the International Hydrological Decade during the past five years (1965-1969) and the USSR contribution to this collaboration are elucidated in the article. Various arrangements performed in the USSR on the implementation of the national IHD programme as well as on the work being fulfilled in collaboration with socialist and non-socialist countries are reported.

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REEL/FRAME
19770148

1/2 036

UNCLASSIFIED

PROCESSING DATE--30 OCT 70

TITLE--STUDY OF THE MAGNITUDE AND CHARACTER OF RESIDUAL STRESSES IN SHEETS
OF STEEL USED IN ELECTRICAL APPARATUSES -U-

AUTHOR-(03)-KORZUNIN, G.S., TARASYUK, B.A., UVAROVA, M.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, SERIYA FIZICHESKAYA,
FEBRUARY 1970, PP 281-288
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--STEEL SHEET, SHEET METAL, METAL STRESS, TECHNICAL STANDARD,
METAL COMPRESSIBILITY, INTERNAL STRESS, STRESS RELAXATION, MAGNETIC
ANISOTROPY, ELECTRIC STEEL, TRANSFORMER STEEL, HOT ROLLING, MAGNETIC
PROPERTY, STRAIN GAGE, MAGNETIC COERCIVE FORCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1314

STEP NO--UR/0048/70/000/000/0281/0288

CIRC ACCESSION NO--APO121811

UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121811

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MECHANICAL STRESSES OCCURRING DURING FORCED STRAIGHTENING OF SHEETS OF HOT ROLLED TRANSFORMER STEEL WITH NORMAL FINISHING OF THE SURFACE (ACCORDING TO GOST (GOVERNMENT STANDARD) 802-58) WERE DETERMINED BY MEANS OF STRAIN GAUGES AFFIXED TO VARIOUS PARTS OF ENTIRE SHEETS. WITH A PRESSURE OF 300 KG ON HALF OF A SHEET, COMPRESSION PREDOMINATES IN THE METAL, ATTAINING 600 KG-CM PRIMEZ IN SOME SECTIONS. BY MEANS OF A MAGNETIC ANISOTROPY SENSOR, STRAIN GAUGES, AND A FORSTER DERSTED METER, THE AUTHORS DETERMINED THE MAGNITUDE AND CHARACTER OF THE DISTRIBUTION BY SHEET OF THE RESIDUAL STRESSES AND COERCIVE FORCE. AFTER THE TESTED SHEETS WERE CUT, RELAXATION OF THE STRESSES AND COERCIVE FORCE WAS OBSERVED. A LARGE INHOMOGENEITY OF INTERNAL STRESSES OF THE FIRST KIND AND OF THE H SUBC WAS INDICATED WITH RESPECT TO MAGNITUDE AS WELL AS ORIENTATION IN THE PLANE OF THE SHEET. AFTER CUTTING, THE STRAINS ARE REMOVED AND H SUBC DECREASES. THE QUANTITATIVE RESULTS OF THE MEASUREMENTS OF THE INTERNAL STRESSES AND COERCIVE FORCE WHEN THE SHEETS ARE CUT INDICATE THE POSSIBLE EXISTENCE OF A DIVERSION IN THE EVALUATION OF THE MAGNETIC PROPERTIES OF STEEL FOR ELECTRICAL APPARATUS PRODUCED AS WHOLE SHEETS AND THOSE OF INDIVIDUAL SAMPLES. FACILITY: INSTITUTE OF THE PHYSICS OF METALS, USSR ACADEMY OF SCIENCES.

UNCLASSIFIED

USSR

KORZUNIN, G. S., TARASYUK, B. A., UVAROVA, M. P. (Institute of the Physics of Metals, USSR Academy of Sciences)

"Study of the Magnitude and Character of Residual Stresses in Sheets of Steel Used in Electrical Apparatuses"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, February 1970, pp 281-288

Abstract: Mechanical stresses occurring during forced straightening of sheets of hot-rolled transformer steel with normal finishing of the surface (according to GOST [Government Standard] 802-58) were determined by means of strain gauges affixed to various parts of entire sheets. With a pressure of 300 kg on half of a sheet, compression predominates in the metal, attaining 400 kg/cm² in some sections.

By means of a magnetic anisotropy sensor, strain gauges, and a Förster oersted meter, the authors determined the magnitude and character of the distribution by sheet of the residual stresses and coercive force. After the tested sheets were cut, relaxation of the stresses and coercive force was observed.

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USSR

KORZUNIN, G. S., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, February 1970, pp 281-288

A large inhomogeneity of internal stresses of the first kind and of the H_c was indicated with respect to magnitude as well as orientation in the plane of the sheet. After cutting, the strains are removed and H_c decreases. The quantitative results of the measurements of the internal stresses and coercive force when the sheets are cut indicate the possible existence of a divergence in the evaluation of the magnetic properties of steel for electrical apparatuses produced as whole sheets and those of individual samples.

2/2

Turbine and Engine Design

-USSR

UDC 533.697

ARTEM'YEV, N. S., KORZUNOV, Yu. L., MITYUSHKIN, Yu. I.

"Calculation of Flow in a Nozzle Grid With Nonradial Positioning of the Blades"

Tr. Leningr. krokrablestroit. in-ta (Works of Leningrad shipbuilding Institute), 1971, No. 73, pp 3-11 (from RZh-Mekhanika, No 8, Aug 72, Abstract No 8B482)

Translation: The approximation method proposed for calculating flow in an annular grid with a nonradial positioning of the nozzle blades is a development of a method presented in a previous paper (see Artem'yev, N. S. and Mityushkin, Yu. I., Energomashinostroeniye, No. 12, 1967). The method is based on the introduction of approximation relationships in the equations for the meridional lines of flow. The attenuation parameters and losses along the radius are assumed constant in the solution of the problem and the radial gradient of the density is neglected, since this can be ensured by an appropriate inclination of the blades. The shape of the limiting surfaces and the geometry of the nozzle blades are assumed given. Integration of the system of equations obtained under these assumptions is carried out by the Runge-Kutta method. In the first example considered 1/2

USSR

ARTEM'YEV, N. S., et al, Tr. Leningr. koorabestroit. in-ta, 1971, No. 73,
pp 3-11

the equation of the meridional line is approximated by a cosinusoidal line. It is shown that this solution is applicable only for thin sheet blades. In the case of thick blades it is necessary to take into account the rise in the lines of flow in the input section of the annular nozzle grid which leads to greater curvature of the meridional lines of flow. In the first approximation this is done by an approximation of the equation for the meridional line of flow by a fourth degree polynomial. In the second approximation a fifth degree polynomial is used that ensures accuracy sufficient for practical purposes. 14 ref. A. G. Plotkin.

2/2

Marine and Shipbuilding

USSR

UDC 62-135-253.5-226.3-86;629.12

KORZUNOV, YU. L., MITYUSHKIN, YU. I.

"Application of Certain Means of Mechanization of a Wing in Nozzles and Working Grids of Ship Turbines"

Tr. Leningr. korablestroit. in-ta (Works of Leningrad Shipbuilding Institute), 1970, No. 70, pp 43-53 (from RZh-Turbostroyeniye, No 8, Aug. 71, Abstract No 8.49.24)

Translation: Theoretical solutions of the application of certain means of wing mechanization to nozzles and working grids of axial turbines in order to raise their economy in operating regimes characterized by low values of the velocity characteristics v/c_{ad} are considered. The following versions are discussed: a nozzle blade with a fixed flap, a nozzle blade with a movable flap, a multi-slit nozzle blade, a two-step nozzle blade, a two-step nozzle grid, a nozzle blade of variable geometry, and a nozzle blade of controlled geometry. The mechanization of the blade diffusor of an axial turbine stage and the application of means of mechanization of the wing to the working lattice are discussed. Thorough aerodynamic studies must be carried out to evaluate the effectiveness of these means of mechanization of nozzle and working blades. 7 ill., 9 ref.

L. P. D.

1/1

1/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SYNTHESIS OF BENZO,G,QUINOLINE DERIVATIVES. VI MECHANISM OF THE
CYCLIZATION OF BETA,2, CARBOXYNAPHTYL,3,AMINO,PROPIONIC ACID TO
AUTHOR--(03)-BEKHLI, A.F., KORZYBEVA, N.P., PERSELEN, YE.M.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (3), 394-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AROMATIC CARBOXYLIC ACID, BENZENE DERIVATIVE, AMINE
DERIVATIVE, QUINOLINE, CHEMICAL SYNTHESIS, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1000

STEP NO--UR/0409/70/000/003/0394/03-8

CIRC ACCESSION NO--APO130043

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 011
CIRC ACCESSION NO--AP0130043
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MIXT. SHOWN ON MICROFICHE.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CHOLECYSTOGRAPHY AND CHROMATIC DUODENAL CATHETERIZATION IN DISEASES
OF THE GALLBLADDER AND BILE DUCTS -U-
AUTHOR--KORZYUK, L.S.

COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 5, PP 40-43

DATE PUBLISHED----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DUODENUM, GALLBLADDER, BILE, DIGESTIVE SYSTEM DISEASE,
PROPHYLAXIS, MORPHOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1762

STEP NO--UR/0497/70/048/005/0040/0043

CIRC ACCESSION NO--AP0129130

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129130
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A COMBINATION OF CHOLECYSTOGRAPHY AND CHROMATIC DUODENAL CATHETERIZATION MAY BE UTILIZED AS A CLINICAL METHOD FOR THE EVALUATION OF THE MORPHOLOGY AND FUNCTION OF THE GALLBLADDER. A COINCIDENCE OF THE RESULTS OF CHOLECYSTOGRAPHY AND CHROMATIC DUODENAL CATHETERIZATION WAS OBSERVED IN 80 PER CENT OF CASES. THE RESULTS DID NOT COINCIDE IN 20 PER CENT OF CASES, MAINLY IN PATIENTS SUFFERING FROM CHRONIC CHOLECYSTITIS.

FACILITY:
FACILITY:

KLINICHESKAYA BOL'NITSA KOMITETA GOSUDARSTVENNIY.
BEZOPASNOSTI PRI SOVETE MINISTROV SSSR.

UNCLASSIFIED

USSR

UDC 621.382.539.1.074

KONZYUK, T. G., OVECHKIN, V. V., PASHIN, A. Z., RAU, I. F., SMIRNOV, A. N.,
TAUBER, A. G., SHCHEBIOT, U. V., YUROVSKIY, A. V.

"Use of Thermoelectric Microrefrigerator for Cooling of Gamma-Spectrometric
Si(Li) Detectors"

V sb. Prikl. yadern. spektroskopiya (Applied Nuclear Spectroscopy --
Collection of Works), Issue 1, Moscow, Atomizdat, 1970, pp 223-232 (from
RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5B257)

Translation: The construction and production technology of Si(Li) Gamma
radiation detectors with a thickness of the sensitive region up to 10 mm
are described. The spectrometric properties are studied of such detectors,
which are cooled with the aid of thermoelectric microrefrigerators of
temperatures of minus 40°C. It is found that such cooled detectors make
it possible to realize an energy resolution of 1-1.8 percent for $\text{^{137}Cs}$.
Several possible and promising uses in applied spectrometry of the de-
tectors described are shown.

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UDO 621.583.557.533.8

USSR

KORZYUK, T.G., SMIRNOV, A.N., TAUBER, A.G."Thermoelectric Coolers For Photocathodes"

Kholodil'n. tekhn. i tekhnol. Resp. nauchno-tekhn. (Cooler Techniques And Technology. Republic Interdepartmental Collection), 1970, No 9, pp 15-17 (from RZh-Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11A165)

Translation: The paper reports on the development and manufacture of small batches of thermoelectric coolers (TC) for photomultipliers and other electrosvacuum devices. With respect to the method of heat removal from the hot junctions of thermopiles, the TC developed are divided into three groups: with forced blowing, for a system of fins, with liquid heat removal, and heat removal to the mass of the object. It is shown that one-stage thermopiles reduce the temperature by 30° C and the two-stage by 50-55° C. At present, use of three-stage thermopiles is structurally inexpedient. Type R-72KM coolers for devices of 50-mm diameter are related to the first group of TC. The consumable power of the d-c for supply of coolers and ventilators does not exceed 65 watt. The temperature drop is 50° C. For devices 30-mm in diameter, a two-stage TC was developed with a reduction of temperature by 50° C and a consumable power of 25 watt. A one-stage variation of such a TC reduces the temperature by 30° C

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and the consumable power \sim 15 watt. A TC developed for the FEU[photomultiplier]-13 and reducing the temperature by 30° C pertains to the second group. A TC for the FEU-31 which reduces the temperature by 15° C with a consumable power \sim 6 watt may pertain to the third group. S.D.

2/2

- 113 -

1/2 008 UNCLASSIFIED PROCESSING DATE--18SEPT0
TITLE--A MIXED PROBLEM FOR CERTAIN UNSTEADY EQUATIONS WITH DISCONTINUOUS
COEFFICIENTS -U-
AUTHOR--KORZYUK, V.I.

COUNTRY OF INFO--USSR *K*

SOURCE--DIFFERENTIAL'NYE URAVNENIIA, VOL. 6, FEB. 1970, P. 343-357

DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--PARABOLIC DIFFERENTIAL EQUATION, LINEAR DIFFERENTIAL EQUATION,
EXISTENCE, UNIQUENESS, MIXED BOUNDARY VALUE PROBLEM, MATHEMATIC OPERATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1980/0144

STEP NO--UR/0376/70/006/008/0341/0357

CIRC ACCESSION NO--AP0048436

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--18 SEP 79

CIPC ACCESSION NO--AP0048436

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONSIDERATION OF THE PROBLEM OF COUPLING GENERAL LINEAR PARABOLIC TYPE EQUATIONS OF ORDER 2M WITH A FIRST DERIVATIVE WITH RESPECT TO TIME AND AN UNSTEADY EQUATION WITH A SECOND DERIVATIVE WITH RESPECT TO TIME WITH GENERAL HOMOGENEOUS BOUNDARY CONDITIONS AND COUPLING CONDITIONS. THE EXISTENCE AND UNIQUENESS OF A STRONG SOLUTION TO THIS PROBLEM IS DEMONSTRATED BY A FUNCTIONAL METHOD. SPECIFIC EXAMPLES OF PROBLEMS INVOLVING A BIHARMONIC OPERATOR ARE PRESENTED.

UNCLASSIFIED

USSR

UDC 678.06-419.8:677.521.019.34

MAKAROV, V. G., YARTSEV, M. G., and KOSACHENKO, T. K.

"Destruction of Fiberglass Based on Phenolic Resins by the Action of Temperature and an Aggressive Medium"

Moscow, Plasticheskiye Massy, No 2, 1973, pp 63-64

Abstract: Experimental results are reported for the study of the kinetics of the destruction of phenolic fiberglass in a wide temperature range under the influence of an aggressive medium. Fiberglass based on the phenolic binder FSM, FSK, FSP, and KAST-V in 45% solution of hydrochloric acid was investigated. It was established that the decrease in mechanical strength of the fiberglass is a heterogeneous process of the first order. The temperature of the aggressive medium determines the extent of its course. The kinetic equation for the destruction processes of fiberglass was shown to hold for a wide range of temperatures.

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USSR

UDC: 534

KOSACHEVSKAYA, M. M.

"On the Stability of Periodic Solutions of the Equation of Motion of the Pivot of an Unbalanced Rotor"

Tr. Msk. in-ta inzh. zh.-d. transp. (Works of the Moscow Institute of Railway Transportation Engineers), 1971, vyp. 347, pp. 22-27 (from FZh-Mekhanika, No 7, Jul 72, Abstract No 7A139)

Translation: An investigation is made into the question of stability of forced oscillations of a journal. It is shown that in the case of low values of the coefficient of imbalance, the nonresonance and the resonance solutions of the differential equation of motion are bounded for a system without friction, and are asymptotically stable for a real system. In the case of appreciable imbalance of the rotor, the convergence of the solutions depends on the rotational velocity of the rotor. Parametric perturbation effects are possible in the given system. Corresponding regions of unstable parameters are given for which there are no stable periodic motions of the journal. Author's abstract.

1/2 038

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--COMPOSITION FOR LOW TEMPERATURE ELECTROLYTIC BORON PLATING -U-

AUTHOR--(05)-LYAKHOVICH, L.S., VORDOSHIN, L.G., KARPENKO, D.P.,
~~KOSACHEVSKIY, L.N.~~, DOLMANOV, F.V.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 261,086

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--06JAN70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CHEMICAL PATENT, ELECTROLYTE, METAL PLATING, BORON, LEAD
OXIDE, BORON COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/2001

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0115800

UNCLASSIFIED

2/2 038 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AA0115800
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPRN. CONSISTED OF NA
SUB2 B SUB4 D SUB7. 10H SUB2 D 60-75 AND P00 25-40 WT. PERCENT.
FACILITY: BELORUSSIAN POLYTECHNIC INSTITUTE.

UNCLASSIFIED

Acc. Nr.: AP0045589

Ref. Code: UR 0463

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, Nr 1,
pp 137-143

MELTING OF DNA WITH DEFECTS IN ITS SECONDARY STRUCTURE
Berestetskaya, I. V.; Kosaganov, Yu. N.; Larurkin, Yu. S.;
Trifonov, E. N.; Frank-Kamenetskiy, M. D.
Institute of Atomic Energy, USSR, Moscow

It is shown that the increase in width of the melting range of DNA due to shear degradation is in accordance with the recently developed theory [5]. Since this increase is due to the disruption of the base stacking interaction at the ends of helical regions, the measurement of the increase of the melting width can be used as a method for determination of concentration of defects (locally denatured sites) in DNA of high molecular weight. Potentialsities of the proposed thermodynamic method are illustrated by the experiments with DNA samples containing defects induced by UV-irradiation. The

12 REEL/FRAME
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AP0045589

concentration of defects in these DNA samples was estimated also by means of recently proposed kinetic method [1]. Analysis of the question concerning the sensitivity of both methods in regard to the defects of different origin showed that as it had been expected these methods did not distinguish between the ends of sheared molecules and the ends of helical regions neighbouring the locally denatured sites. This result confirms the validity of the use of shear degraded DNA for calibration of both methods.

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19780565

See

USSR

UDC 621.435-326.3+21 3.5.031.5

SAVINOV, L. V., and KOSAEV, V. S.

"Generalized Gas-dynamic Characteristic of the Straight Blade Lattice"

Tr. TsNII Mor. Flota / Works of the Central Scientific Research Institute of the Maritime Fleet /, No 148, 1971, pp 9-18
(from Referativnyy Zhurnal, Turbostroyeniye, No 49, Single Issue No 2, 1972, Abstract No 2.49.83.)

Translation : Results of blowing through of a large selection of subsonic blade lattices of axial turbines of transport power plants are analyzed. Generalized dependences were obtained of the loss factor and the flow take-off angle of different flow-past conditions by angle of attack (-60—+30°) and flow rate (M = 0.2—1.1) for arbitrary interblade passage. Icons are suggested for further distribution of generalization results on compressor lattices and axial stages of turbines, seven illustr., three biblio. refs.

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USSR

UDC 669.71:620.172.251.226

KOSAREV, A. I., BICH, E. N., and PARFENOVA, N. V., All-Union Institute of
Light Alloys

"Strengthening and Weakening of Aluminum Alloys at 135-150°C Under Load"

Moscow, Metallovedeniye, No 3, 1973, pp 41-45

Abstract: The mechanical properties and structure of intermediate products of D20-1, D16, and VA2Z3 precipitation-hardening aluminum alloys after soaking at increased temperatures under stress were investigated in this work and the results compared with AK4-1 alloy properties from a previous study. The heat treatments consisted of the following for each alloy: D20-1, 2.5-mm-thick sheet -- aged at 170°C for 16 hours; D16, 2-mm-thick sheet, naturally aged and aged at 190°C for 8 hours; VA2Z3, sheet 1.8 mm thick, naturally aged and aged at 160°C for 12 hours; D16, extruded rod 100 mm in diameter, naturally aged and aged at 190°C for eight hours; and VA2Z3, extruded strip 54 mm thick, aged at 160°C for 12 hours. It was found that strengthening and weakening processes occur in these alloys at 150°, 135°, and lower temperatures under the action of tensile stresses; strengthening is caused by additional precipitation of strengthening phase particles and phase cold working, while weakening results from coalescence of the precipitated particles. With increased temperature and reduced stress the process of coalescence is accelerated in D20-1 and D-16

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USSR

KOSAREV, A. I., et al, Metallovedeniye, No 3, 1973, pp 41-45

alloys and promotes the presence of the less thermally stable Cu₁₁ phase in intermediate products and a nonuniform, partially recrystallized structure in extruded intermediate products of D16 alloy. Extruded intermediate products with a coarse-grain recrystallized structure have a greater tendency toward strengthening. The long-time strength of these intermediate products can be more stable than the long-time strength of intermediate products with a fine-grain, equiaxial structure. In the height direction, these intermediate products are strengthened less and possess a lower long-time strength than those products with the fine-grain, equiaxial structure. It is possible to judge the tendency of an alloy to strengthening and weakening from long-time strength tests by the change in long-time ductility: the greater the slope of the curves the more intensive is the strengthening. An increase in relative reduction in area during long-time strength tests characterizes intensive weakening of the alloy at the time sample necking commences. 4 figures, 1 table, 3 bibliographic references.

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KOSAREV, A. L.

UDC 551.576

TABLE FOR CALCULATING THE ADIABATIC VALUE OF THE CLOUD WATER CONTENT

Article by A. L. Kosarev, Doctor of Physical and Mathematical Sciences I. P. Lomakin, Central Aerohydrodynamic Laboratory, Moscow, Meteorologiya i Gidrometeorika, No. 3, 1977, subtitled 19 July 1971, pp [107-110].

It was demonstrated that the dependence of the adiabatic value of the cloud water content w on the temperature T_0 and the pressure p_0 at the condensation level and the altitude z above this level can be calculated with an accuracy of ±5 percent by a simple formula in the form of a three-term polynomial with respect to p_0 and a second degree polynomial with respect to T_0 and z .

The adiabatic value of the cloud water content w is the maximum amount of water forced per unit cloud volume on pseudoadiabatic ascent of the air above the condensation level. It is assumed that water does not leave the convoluted volume or enter it from the outside. The concept of "adiabatic water content" is extraordinarily convenient since it contains neither condensation nor evaporation in cloud physics.

From the preceding definition it is obvious that

$$w = \frac{1}{2} \rho_0 c T_0 \ln \left(\frac{p_0}{p_0 - \rho_0 g z} \right) - \rho_0 \bar{v}_w$$

where ρ_0 is the specific humidity,

p_0 is the density,

T_0 is the adiabatic temperature,

\bar{v}_w is the specific volume,

and g is the acceleration of gravity. The adiabatic w makes the values pertaining to the condensation level, T_0 , independent of the level where z is the altitude above the condensation level.

USSR

UDC 612.314.58(088.8)

YEFREMOV, I. S., KOSAREV, G. V., KOS'KIN, O. A., and STRATIY, V. I. [Mosk.
energ. in-t--- Mo~~st~~ Power Institute]

"Device for Regulation of D-C Voltage"

USSR Author's Certificate No 2599995 (sic), filed 3 Feb 69, published 4 May
70 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No
SB443P)

Translation: An improvement of the circuit of a direct pulse d-c converter
is proposed. In order to decrease overvoltage at the principal thyristor,
the circuit is fulfilled so that the cathode of an auxiliary thyristor is
connected with the positive terminal of the power supply through a com-
mutating capacitor, and the anode of both thyristors is connected across a
commutating choke coil. 1 ill. I.A.

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USSR

UDC: 620.179.152.5

GRUZIN, P. L., DRABKIN, L. A. and KOSAREV, L. I.

"Scattering of γ -Radiation by Cs₁₃₇ Steel Cylindrical Barrier"

Sb. Radioizotop. sredstva Kontrolya i automatiz. tekhnol. protsessov v prom-sti (Symposium on Radioisotope as Means of Control and Automation of Manufacturing Processes in Industry) Moscow, Atomizdat Publishing House, 1972, pp 523-527 (from Referativnyy Zhurnal-Metrologiya i Izmeritel'naya Tekhnika, No 8, 1972, Abstract No 8.32.255)

Translation: Angular spectrum of once scattered radiation is obtained for the case of narrow beam of γ -ray falling on Cs₁₃₇ steel cylindrical barriers of various thickness and curvature. It is shown that data on scattering of γ -quanta in parallel plane barriers with scattering angle of 30° can be used in this case with sufficient accuracy. The effect of cylindrical barrier thickness on the scattered radiation flux was investigated. The obtained relations have maximums. With the wall thickness greater than the one corresponding to the maximum flux the relation between flux and thickness is linear (3 illustrations, 1 reference).

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USSR

UDC: 669.721.472(D88.8)

MARKOV, G. S., GRIGOR'YEVA, Ye. A., KOSAREV, S. P., MULZHIAVLEV, K. D.,
ZUYEV, N. M., IVANOV, A. B.

"A Magnesium Electrolyzer"

USSR Author's Certificate Number 350863, Filed 28/12/70, Published 28/09/72
(Translated from Referativnyy Zhurnal Metallurgiya, No \$, 1973, Abstract No
8G204P).

Translation: The electrolyzer is equipped with chlorine-removing anodes and diaphragms. In order to reduce the losses of Mg and Cl₂ and improve their separation, a diaphragm is placed horizontally between the anodes of the electrolytic cells, separating the zone of collection of Mg from the zone of collection of Cl₂.

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USSR

UDC 669.721.L72(033.8)

KOSAREV, S. P.

"Tubular Heater"

USSR Author's Certificate No 267923, Filed 20 Mar 69, Published 31 July 70
(from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G154P)

Translation: A tubular heater is proposed for heating molten salts and metals, for example, Mg. It includes the heater housing and the heating element installed in it. In order to increase the service life, the heater housing is open at the bottom, and the heating element is suspended freely and submerged on the lower end in the melt. There is 1 illustration.

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Instrumentation and Equipment

USSR

UDC 669.721.472(086.8)

KOSAREV, S. P., MUZHZHAYLEV, K. D., and KHISTYUK, G. P., All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry

"Contact Head of Graphite Anode"

USSR Authors' Certificate No 272566, Cl. 40c, 3/02; 40c, 3/08, (C 22 d 3/02, C 22 d 3/08), filed 10 Jul 68, published 7 Sep 70 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3 G173 P)

Translation: The contact head of the graphite anode of a magnesium electrolyzer, including the cast-iron lining with current-feeding rod, is unique in that, in order to improve anode hermeticity and lengthen its service life, the contact head is passed through an opening in the lining of the electrolyzer and supplied with a flange around the perimeter, by which flange the head is joint to the flange of a connecting branch mounted coaxially at the opening and attached by its under side, which has the appearance of a plate, to the body of the electrolyzer. The connecting branch is supplied with a connecting hose in order to feed gas into the anode space. One illustration.

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Magnesium

USSR

UDC 669.721.471(068.8)

KOSAREV, S. P., MUZHZHAYLEV, K. D., KHRISTYUK, G. P., and TIMOFEEV, V. V.,
All-Union Scientific Research, Design and Planning Institute of the
Aluminum, Magnesium and Electrode Industry.

"Diaphragmless Magnesium Electrolyzer"

USSR Authors' Certificate No 275418, C. 40c, 3/02, 40c, 3/03, (C 22 d
3/02, C 22d 3/08), filed 19 Mar 69, published 2 Oct 70 (from RZh-Metallur-
giya, No 3, Mar 71, Abstract No 3 G172)

Tranxlation: To increase metal yield in proportion to the current, the
under-surface of the bath cover is made to slope toward the electrolytic
cell, while the chlorine offtakes are placed in the cover on the side of
the collector cell.

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USSR

UDC 669.721.4(038.8)

KOSAREV, S. P., and MUZHZHLEV, K. D., All-Union Scientific Research, Design and Planning Institute of the Aluminum, Magnesium and Electrode Industry

"Bath for Heating Molten Salts and Metals"

USSR Authors' Certificate No 276441, Cl. 40c, 3/02, C 22 d 3/02, filed 11 Feb 69, published 19 Oct 70 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3 G174 P)

Translation: For more uniform heating of the metal, decreased impregnation of the hearth with the melt, and simplification of sludge removal, the tubular elements are placed inside metal bars. The metal bars are made of steel or cast iron.

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USSR

UIC 669,721.472(088.8)

KOSAREV, S. P., MUZHZHLEV, K. D., DRONYAYEVA, O. N.

"Method of Thermal Regulation of Magnesium Electrolyzer"

USSR Author's Certificate No 273430, Filed 8/04/68, Published 15/09/70
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract
No 2 G188 P)

Translation: A method is suggested for thermal regulation of a magnesium electrolyzer by changing the ohmic resistance of the electrolyte in the interelectrode gap. To increase the accuracy of regulation and decrease the dimensions of the electrolyzer, the electrodes are placed relative to each other perpendicular to the direction of the current in the interelectrode gap. 4 figures.

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1/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--THE GOR'KOVCHANIN HOVERCRAFT -U-

AUTHOR--KOSAREV, V.

COUNTRY OF INFO--USSR

SOURCE--VOONYY TRANSPORT, SEPTEMBER 8, 1970, P 3, COLS 1-3

DATE PUBLISHED--08SEP70

SUBJECT AREAS--AERONAUTICS

TOPIC TAGS--HOVERCRAFT, AIRCRAFT PERSONNEL/(U)GOR'KOVCHANIN HOVERCRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/1631

STEP NO--UR/9028/70/000/000/0003/0003

CIRC ACCESSION NO--AN0138607

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--0408070

CIRC ACCESSION NO--AN0138607

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DESCRIBES THE REGULAR RUN OF THE "GOR'KOVCHANIN" OVER THE SURA RIVER. THE ASSOCIATES OF THE CENTRAL DESIGN BUREAU "BOLGOBALTSUDOPROYEKT" AND THE GRIVT ARE FREQUENT PASSENGERS OF THE "GOR'KOVCHANIN", SINCE THEY CONTINUE TO IMPROVE ITS DESIGN. PROFESSOR V. ANDRYUTIN, CANDIDATE OF TECHNICAL SCIENCES G. SIROTINA, AND ENGINEERS V. ZAROASTROV, AND S. RASTORGUYEV, ET AL ARE NAMES AS DEVELOPERS OF THE CRAFT.

UNCLASSIFIED

USSR

UDC 615.285.7.099.036.11

LUZHNIKOV, Ye. A., and KOSAEV, V. A., Republic Center for the Treatment of Acute Poisonings, Institutes of First Aid imeni N. V. Sklifsovskiy, Moscow

"Characteristics of the Clinical Course of Acute Intoxication with Organophosphorus Insecticides"

Moscow, Terapevticheskiy Arkhiv, Vol 43, No 5, 71, pp 106-107

Abstract: Observation of patients with acute peroral poisoning with organophosphorus insecticides (thiophos, chlorophos), who were hospitalized and given specific therapy, indicated that after an initial elimination of acute symptoms, resulting in a satisfactory clinical condition, a relapse sometimes occurred which often led to sudden death. Thus, of 145 patients hospitalized and treated in 1969, 20 developed relapses and 8 of these died. All of these patients were admitted in the 2nd and 3rd stages of poisoning and showed a decrease in cholinesterase activity amounting to 1.6-2.5 micromole/ml/min. The relapses were due to additional resorption of the poison from the gastrointestinal tract and insufficient specific therapy. In the case of a patient who drank 100 ml of a 30% solution of chlorophos with the intention of committing suicide, a severe relapse was treated by indirect massage of the heart and injection of atropine into the cardiac cavity. The bronchial
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LUZHNIKOV, Ye. A. and KOSAREV, V. A., Terapevticheskiy Arkhiv, Vol 43, No 5, 71, pp 106-107

passages were washed with a 4% soda solution containing antibiotics. During intensive therapy applied to treat the relapse, a large amount (88 ml of a total of 120 ml during hospitalization) of a 15% solution of dipyroxime acting as a cholinesterase reactivator was administered to the patient. The patient was also treated with atropine. The patient was released in a satisfactory condition upon complete recovery after 47 days of hospitalization.

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USSR

UTC 518:517.9:533.7

KOSAREV, V. I., MAGOMEDOV, K. M., Moscow

"Divergent Difference Scheme for Calculating Supersonic Steady-State Flows
of Complex Structure"

Moscow, Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Vol 13,
No 4, Jul/Aug 73, pp 923-937

Abstract: A method is described for constructing a difference scheme which approximates equations of steady-state flow of an inviscid, thermally non-conductive gas in divergent form. Numerical results show that the resultant scheme is suitable for continuous calculation (without isolation of discontinuity surfaces) of flows with internal compression shocks.

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USSR

UDC 533.5.011

GONCHARUK, P. D., KOSAREV, V. I., PROKHOROV, M. B.

"On Supersonic Flow Around Axisymmetric Bodies With a Concave Generatrix"

Tr. Konf. Mosk. fiz.-tekhn. in-ta, 1970. Ser. "Aerofiz. prikl. mat." (Works of the Conference of Moscow Physicotechnical Institute, 1970. Series "Aerophysics and Applied Mathematics"), Moscow, 1971, pp 53-63 (from RZh-Mekhanika, No 8, Aug 72, Abstract No 88409)

Translation: Axisymmetric and three-dimensional supersonic flow of gas around bodies of rotation, the generatrix of which has a segment of positive curvature (segment of concavity), are studied. Sample calculations are given considering the effect of the boundary layer on the field of gasdynamical values in the external flow. 7 ref.

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USSR

UDC 518.517.9:533.7

KOSAREV, V. I.

"Computing Ultrasonic Steady-State Gas Flow With Inner Compression Discontinuities"

Moscow, Zhurnal Vychislitel'nov Matematiki i Matematicheskoy Fiziki, Vol 11, No 5, Sep-Oct '71, pp 1262-1271

Abstract: The numerical computation of steady state ultrasonic gas flow presents little difficulty, provided the solution is continuous. This, however, is not always the case, as in the example of aircraft in flight, in which the air flow around the craft has discontinuous jumps in density. In this connection, the author discusses the part played in numerical solutions of these problems by the dissipative characteristics of difference equations and examines a method of solution in which oscillations occurring in the gas flow localize the surface of an inner discontinuity and can be smoothed out by averaging the parametric values of the flow. If the intensity of the discontinuity is low, the gas dynamic values obtained in the solution are highly accu-

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KOSAREV, V. I., Zhurnal Vychislitel'nov Matematiki i Matematicheskoy Fiziki, Vol 11, No 5, Sep-Oct 71, pp 1262-1271

rate. He also discusses a method proposed in an earlier paper (K. M. Magomedov and A. S. Kholodov, O postroenii rannostnykh skhem dlya ursvneniy giperbolicheskogo tima na osnove kharakteristicheskikh sootnosheniy -- Constructing Difference Systems for Hyperbolic Equations Based on Characteristic Relationships -- 1969, No 2, 9, pp 373-386) and published in this same journal, in which a system of difference equations is obtained for approximating quasi-linear equations of hyperbolic form. He shows how the method is used to solve this gas dynamics problem and concludes by thanking one of the authors of that paper, K. M. Magomedov, for his assistance.

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Ion Exchange

USSR

LUPUNOV, I. N., KAZANTSEV, Ye. I., and KOSAREV, V. M., Ural'sk Polytechnic Institute imeni S. M. Kirov

"Chemical Stability of the Carboxyl Cation KB-4 X 7 in N-Form"

Ivanovo, Izvestiya Vysshikh Uchebnykh Zavedeniy, Khimiya i Khimicheskaya Tekhnologiya, Vol XII, No 11, 1970, pp 1,607-1,611

Abstract: One of the requirements placed upon ion-exchange resins in daily use is that they be chemically resistant to the action of bases, acids and oxidizers, and knowledge of such resistance is critical in the choice of ionite for particular problems; but research in this area has been unsystematic and incomplete.

The authors studied the action of solutions of HNO_3 , H_2O_2 , $(\text{NH}_4)_2\text{S}_2\text{O}_8$, $\text{K}_2\text{Cr}_2\text{O}_7$ and KBrO_3 on the carboxyl cation KB-4 X 7 at temperatures of 18, 50 and 80°C.

It was found that the stability of the cation in these solutions depends both upon the nature of the oxidizer and the temperature. In the case of H_2O_2 and $(\text{NH}_4)_2\text{S}_2\text{O}_8$ in an acid medium at 18°C, decarboxylation occurs, resulting in

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